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Herpetological Forecasting or Just Plain Artistic Change?

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Abstract

Stylistic changes are described in the early coinage of a Greek colony on Sicily. Toward the end of the fifth century B.C.E. a snake, a bivalve and a cephalopod appeared on the reverse of a coin where, previously, only a crab resided. The obverse contains an eagle vigorously dragging a large fish out of water. This celebration of animal diversity is interpreted, with special attention given to the snake. Assuming that the coin has been dated properly by numismatists, we propose that the snake and various other devices constituted a presentiment of impending doom; namely, a devastating attack by Carthage.

Interpreting the meaning of symbols is difficult at best, even when the symbols are contemporary; symbols from other times and places are hazardous in proportion to the historical and cultural distances between image and interpreter. Accordingly, the primary rule is to avoid dogmatism, always remaining open to alternative ideas. With this in mind, we call attention to a coin from Akragas (= Roman Agrigentum after middle of third century B.C.E. = modern Agrigento; south coast of Sicily) founded by Greek colonists around 600 B.C.E. or slightly later. The coin is bronze, 23.4 g, valued as a hemilitron when it was struck (approximately 413–406 B.C.E., see Figure 1). A hemilitron was a relatively minor coin, worth far less than the contemporary silver coins in circulation, probably less than half a day's wage for an unskilled laborer.

The obverse contains an eagle, with wings spread, beak open, and with a large fish in its talons. Previous coins from Akragas had an eagle on the obverse, usually standing with

folded, relaxed wings and closed beak. The typical reverse of earlier coins from Akragas contained a crab with open claws but no prey in them. Our coin has a crab with open claws, apparently supporting a small serpent in the left claw, with a cephalopod and a bivalve below (i.e., behind) the crab. This is an example of a very subtle herpetological coin, as it is easy to miss the snake, particularly on a worn coin (Chiszar and Smith [1999] missed it, although other coins from Agrigentum were listed). Numismatists have interpreted the eagle as symbolic of land and the crab as symbolic of the sea (CNG, 2001). Whereas this interpretation of the crab presents no problem, the eagle is a volant creature associated with celestial spaces more than with land. Since the eagle on the earlier coins of Akragas was perched, we can argue for a combined celestial–terrestrial referent, but it would be inappropriate to ignore the celestial reference of the bird. Hence, we would adjust the view of CNG slightly by arguing that the eagle represents sky and land while the crab represents the sea. Thus, the early coins created



Figure 1. Bronze hemilitron from Akragas, 413–406 B.C.E. Obverse: eagle facing right with fish in its talons, wings and beak open; Reverse: crab holding serpent in left claw, bivalve and cephalopod below, six pellets (indicators of value) surround. The authors thank CNG for this illustration.

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an integrated reference to the three vast realms of air, soil and water. Because it has always been desirable for a state's coinage to be recognizable to its own citizens as well as to its regular trading partners, coin devices also became symbolic of the issuing government and, as such, coin devices changed very slowly. We might infer, therefore, that the citizens of Akragas long conceptualized their home as a place that possessed the desirable characteristics of sea (harbors, sea routes to trading partners, seafood), air (good climate) and land (agricultural fertility).

Our herpetological coin could be interpreted along these same lines, adding several explicit references to seafood (fish, cephalopod and bivalve) and a new reference to the terrestrial realm (snake). Jung (1964), however, would push beyond this allegorical level of thinking to penetrate more deeply into human psychodynamics. He would undoubtedly point out that references to water, especially oceanic water, constitute symbols of the unconscious mind, whereas references to high places might be symbols of the conscious mind. The early coins, with their relaxed eagles and crabs, reflected a satisfactory or untroubled balance between the two realms of the collective Akragan psyche. Inasmuch as the relaxed eagles and crabs characterized Akragan coins for nearly a century, we might infer that life had been happily productive for two or three human generations.

Now the eagle is suddenly shown in a vigorous relationship with a fish; that is, the eagle is hauling something large and difficult out of the sea. Jung would probably see this as the conscious mind being informed (i.e., repremised, revolutionized, even frightened) by the collective unconscious. He might say much the same about the busy reverse of the new coin, with each of the devices calling attention to the unconscious. Three of the devices are water creatures and the fourth is a snake which Jung considered to be another symbol of the unconscious. That the crab is supporting the snake rather than devouring it is probably significant, as this would indicate that an important message from the unconscious was being served up for conscious scrutiny. According to Jung, messages from the unconscious sometimes signal impending transformations of far-reaching importance which are not yet visible to the conscious mind but which deserve careful consideration.

What transformation might the coin have hinted at? We can only guess, but a good possibility would focus on the fact that in 406 B.C.E. Carthage, formerly the primary importer of Akragan agricultural produce, stormed and sacked this Sicilian colony, a blow from which Akragas never completely recovered.

If Akragan celators produced foreboding art, why were their fellow citizens not warned and stimulated to prepare defenses? Perhaps no one, not even the celators, understood

the messages of the art. Perhaps there was merely a vague sense of unease that was not deciphered until too late. It is noteworthy that the few other Akragan coins known from this antebellum period are comparable to the herpetological one in having busy reverses containing three or four oceanic references and vigorous obverses, usually with an eagle worrying a hare, confirming a change in style and hinting at tumult but without additional clarity (Seaby, 1975). Do the winds of war generally feel ambiguous, suffused as they may be with the folly of denial?

Another change occurred in Akragas that might be important, namely, the entrance of the cult of Aesculapius into the polis. Hence, the snake on the busy reverse could be hypothesized to be a reference to this god of medicine and to a seemingly major cultic change within the polis. Against this idea is the fact that the temple of Aesculapius was constructed two centuries after the time of our coin, during the Roman period. Likewise, statues of Aesculapius found elsewhere in the polis were introduced during the Roman period. Accordingly, emphasis on religious change would seem to be anachronistic with respect to our coin.

Could the snake be a sea snake or an eel, either of which would force slight emendations in our analysis (Seaby, 1975)? Since the figure on our coin exhibits no lateral compression or fins, and since sea snakes do not occur in the Mediterranean, these concerns are unwarranted. It might be asked if celators could have produced differentiated representations of eels and snakes? To such a question the unqualified positive answer can be found in the detailed eye stalks and mouth parts of the crab. If the celators wanted viewers to see an eel, we would see fins or lateral compression. Likewise, if the celators had wanted people to see a worm rather than a snake, unambiguous annuli would be present. We are thus on reasonably firm ground in interpreting the serpentine form as a snake.

We prefer the Carthaginian hypothesis, but we readily admit that we might be reading entirely too much premonitory wishful thinking into the hemilitron. After all, the celators might simply have been experimenting with new representations for purely artistic reasons, with no Jungian premonitions being involved. On the other hand, the possibility that a herpetozoan might have such profound significance is surely of interest not only to classicists but also to herpetologists. Although living animals and their ecologies will always form the core of our discipline, understanding the artistic, cultural and psychodynamic roles played by herpetozoans is a reasonable adjunct to the discipline. Attempts to think beyond numismatic devices and into the domains of artistic allegory and psychoanalytic symbolism might even find an adjunctive place in the teaching of herpetology.

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The Herpetofauna of Caño Palma Biological Station, Tortuguero, Costa Rica

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Introduction

Administered by the Canadian Organization for Tropical Education and Rainforest Conservation (COTERC), Caño Palma Biological Station is situated near the village of Tortuguero on the northeast Caribbean coast of Costa Rica. Consisting of approximately 40.5 hectares (100 acres) of seasonally flooded lowland tropical wet forest, Caño Palma occurs within a protected zone adjacent to the much larger Barra del Colorado Wildlife Refuge (92,000 ha). Coupled with Tortuguero National Park to the south and the Idio-Maiz Biological Reserve 40 km to the north in neighboring Nicaragua (Figure 1), Caño Palma is found within the largest continuous tract of Neotropical lowland forest outside the Amazon Basin.

The extent of the fauna occurring at or near Caño Palma has not been fully ascertained, though current census studies document approximately 120 species of mammals, over 300 species of birds, and over 120 species of reptiles and amphibians. An inventory of the herpetofauna at Caño Palma was initiated in 1993 by Tom Mason, Vice-President of COTERC.

Species Composition

Approximately 121 species of reptiles and amphibians, representing 71 genera and 29 families have been identified in

the Caño Palma–Tortuguero region (Table 1). Over half (53%) of these species fall into four families (Polychrotidae, Colubridae, Hylidae and Leptodactylidae). The majority of the species have wide distributions (93% occur to the north into Nicaragua; 90% occur further south into Panama), and one species is endemic to Costa Rica (*Bufo melanochloris*). The assemblage is very similar to the one found further inland at La Selva, Costa Rica. Eighty-seven species of reptiles, representing 16 families, and 48 species of amphibians, representing 9 families have been identified as occurring at La Selva (Guyer, 1994; Donnelly, 1994). The Caño Palma–Tortuguero region shares at least 68 reptile species and 32 amphibian species in common with La Selva.

The most commonly observed reptiles at the station tend to be diurnally active and include species such as *Norops humilis*, *N. lemurinus*, *Iguana iguana*, *Basiliscus plumifrons*, *Ameiva festiva*, *Kinosternon leucostomum*, and *Rhinoclemmys funerea*. Most of the lizard species are diurnal and there is a 50:50 ratio of arboreal lizard species to terrestrial lizard species. There are also more diurnal snake species (60%) than nocturnal and 63% of the snake fauna is arboreal.

Most snake species (80%) occurring within the Caño Palma–Tortuguero area are capable of envenomation, whether for prey capture or for defense. Seven are front-fanged species, comprising three elapids and four viperids. It is interesting to note that 26 of the 31 species of snakes (84%) of the family Colubridae found in the Caño Palma–Tortuguero area possess Duvernoy’s glands and produce some form of toxic saliva (see McKinstry, 1983). Of this total, 11 (35%) are opisthoglyphous (have enlarged rear maxillary teeth that are grooved) while 15 (48%) are aglyphous (having solid teeth that

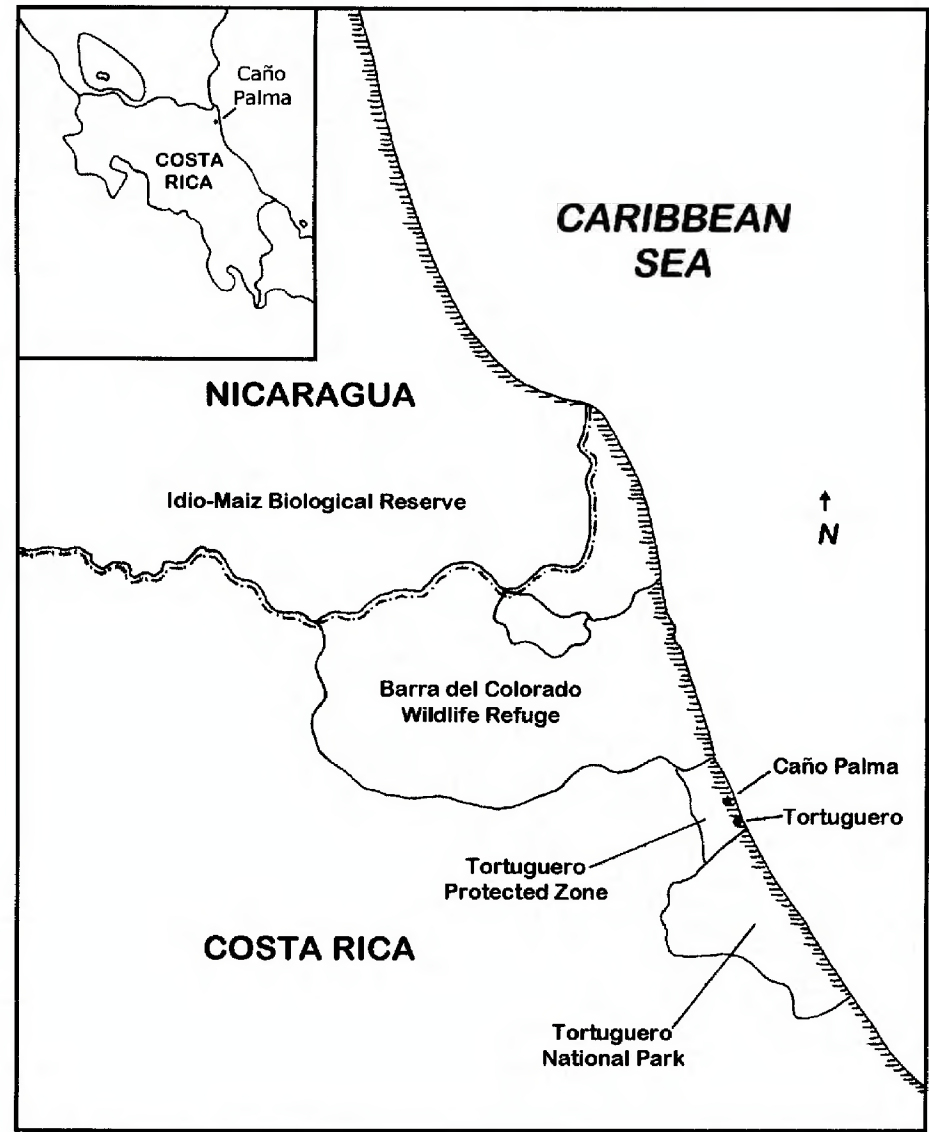


Figure 1. Map of the northeast Caribbean coast of Costa Rica with the approximate location of Caño Palma Biological Station. Inset: position of Caño Palma within Costa Rica.

Table 1. Taxonomic composition of the herpetofauna at Caño Palma–Tortuguero

Group	Families	Genera	Species
Turtles	5	8	10
Lizards	9	17	30
Snakes	4	28	41
Crocodilians	2	2	2
Total reptiles	20	55	83
Caecilians	1	1	1
Salamanders	1	2	3
Anurans	7	13	34
Total amphibians	9	16	38

are not grooved). Six of the aglyphous colubrids possess enlarged rear maxillary teeth that are not grooved; these snakes, combined with the opisthoglyphous snakes, are commonly termed “rear-fanged.”

Many of the amphibian species thus far identified at the station have come from single sightings. The most common species include *Bufo coniferus*, *B. marinus*, *Dendrobates pumilio*, *Leptodactylus pentadactylus*, and several members of the *Eleutherodactylus* genus. Although the family Hylidae is well represented in the area, only *Agalychnis callidryas*, *Scinax elaeochroa*, and *Smilisca baudinii* appear to be routinely observed. Several species of amphibians (*Bolitoglossa striatula*, *Bufo coniferus*, and *Agalychnis calcarifer*) occurring at or near Caño Palma are found at lower elevations (0–3 m) than previously reported by Campbell (1999) and Duellman (2001).

In addition to the reptiles and amphibians associated with the tropical wet forest formations at Caño Palma, four species of sea turtles have been observed at the beach (approximately 200 meters from the station) during nesting season. Tortuguero is known for having the largest nesting population (June–November) of green sea turtles (*Chelonia mydas*) in the Atlantic Ocean. From March to June, leatherbacks (*Dermochelys coriacea*) come ashore in smaller numbers. Hawksbill turtles (*Eretmochelys imbricata*) are occasionally observed from late April to November. Stray loggerheads (*Caretta caretta*), which typically are found further north, in subtropical waters, may venture upon Tortuguero’s shores every few years. Nesting populations have been closely monitored for over 40 years by the late Archie Carr and the Caribbean Conservation Corporation (CCC) (Anon, 1998).

Species Accounts

Notes reflecting habitat preference, seasonal occurrence, behavior, and prey for a number of species observed at Caño Palma are included below. English names, followed by locally common names are given. A complete inventory of the herpetofauna can be found in Table 2.



The most common turtle inhabiting the Tortuguero area is the black river turtle (*Rhinoclemmys funerea*).

REPTILIA

TESTUDINATA

Chelydridae

Chelydra serpentina (Linnaeus 1758)

Snapping turtle, *tortuga cocodrilo*

Several juveniles (<10 cm) were found in November 1995 in a small water-filled sump at the rear of station compound (30 meters from the Caño Palma canal). This same sump harbored three juvenile *Kinosternon leucostomum* and two juvenile *Rhinoclemmys funerea*. A *Leptodeira septentrionalis* was additionally observed along its edges in November 1995. A wide-ranging species, *Chelydra serpentina* occurs from Nova Scotia southward to Ecuador.

Emydidae

Rhinoclemmys funerea (Cope 1876)

Black river turtle, Central American wood turtle, *tortuga negra*

Adults of this species are essentially aquatic and are commonly observed in the rivers of the area. Black river turtles lay relatively large eggs placed singly under leaf litter; a nest is not dug (Scott and Limerick, 1983). Aquatic funnel traps, used to monitor the local mud turtle population, almost exclusively trap this large species. A number of juvenile *Rhinoclemmys funerea* have been observed in semi-aquatic situations as well as foraging on land at Caño Palma. At least one other member of the genus *Rhinoclemmys* occurs within the region but has not been found at the station.

Kinosternidae

Kinosternon angustipons Legler 1965

Narrow-bridged mud turtle, *tortuga pecho quebrado*

Kinosternon leucostomum Duméril, Bibron & Duméril 1851

White-lipped mud turtle, *pochitoque*

K. leucostomum is the more common of the two (possibly three) species of *Kinosternon* found in the area. This species has been observed in the shallow water of the Caño Palma canal as well as on land. Hatchlings, juveniles, and adults have been found at the station. *K. angustipons* is less often encountered, but has been observed on two occasions in shallow water situations.

SAURIA

Gekkonidae

Thecadactylus rapicauda (Houttuyn 1782)

Turnip-tailed gecko, *peco palmeado*

Specimens have been observed both in secondary forest and on structures at the Caño Palma station compound. Nocturnal in habits, *T. rapicauda* feeds primarily on insects, though *Sphaerodactylus* has also been noted as a prey item (Murphy, 1997).

Corytophanidae

Basiliscus plumifrons Cope 1876

Basilisk, Jesus Christ lizard, *chisbala*, *garrobo*, *gallego verde*

Basiliscus vittatus Wiegmann 1828

Striped basilisk, *pasarri o*

Adults and juvenile *B. plumifrons* are commonly observed at the station. Frequently found near water, the name “Jesus Christ” lizard comes from its ability to skip across the water’s surface. The smaller of the two *Basiliscus* species inhabiting the area, *B. vittatus* appears to be very common in the more open areas closer to the ocean. The ecology of this lizard was studied in detail in the Tortuguero area by Hirth (1963).

Corytophanes cristatus (Merrem 1821)

Helmeted iguana, *turipache*

This cryptically colored, diurnal lizard is not commonly observed in the area. Arboreal in nature, one specimen was found at the station in January 1993. Others have been observed near the station in November 1995 and March 2001.

Iguanidae

Iguana iguana (Linnaeus 1758)

Green iguana, *iguana*

A commonly encountered species, *Iguana iguana* is occasionally eaten by local people. Large adults tend to inhabit areas near the upper reaches of medium sized trees and are usually noted in close proximity to water. Juveniles are occasionally observed in low vegetation at the Caño Palma station compound.

Polychrotidae

Norops humilis (Peters 1863)

Anole, *anolí humilde*

Norops lemurinus (Cope 1861)

Anole, *anolí lemurino*

At least ten species of *Norops* (tropical anoles) occur in the Tortuguero area, of which seven have been identified as occurring at Caño Palma. Members of the *Norops* genus have been one of the most extensively studied group of lizards in the Neotropics. The most commonly observed *Norops* species at the station, *N. humilis* and *N. lemurinus* occupy different microhabitats. While the former is an inhabitant of leaf litter and low trunks, the latter tends to spend more time in arboreal locations such as tree trunks, limbs, and low vegetation.

Polychrus gutturosus Berthold 1846

Polychrus, *lagartija de arbol*

One sleeping specimen was found at the station several meters high on a branch during an evening hike in November 1995. An injured *P. gutturosus* was discovered several hundred meters away from the property in November 2000. The South American relative of this species, *Polychrus marmoratus*, is known in Tobago as the “twenty-four hour” lizard, supposedly from the belief that once the lizard clamps itself onto a person’s

arm, death will follow within twenty-four hours (Murphy, 1997).

Teiidae

Ameiva festiva (Lichtenstein 1856)

Ameiva, *chisbalas*, *largartija de Edwards*

Ameiva quadrilineata (Hallowell 1861)

Ameiva, *lagartija metalica*

A brightly colored lizard, *A. festiva* is the larger of the two species occurring in the area. Specimens are frequently observed on leaf litter in secondary forest as well as in open areas closer to the ocean. In southeastern Nicaragua, Vitt and Zani (1996) found that the diet of this active forager primarily consists of crickets, spiders, roaches and katydids. Working with *A. quadrilineata* in the Tortuguero area, Hirth (1963) observed that optimal active body temperatures for this lizard were between 34 and 40°C.

Scincidae

Mabuya unimarginata Cope 1862

Skink, *mabuya*

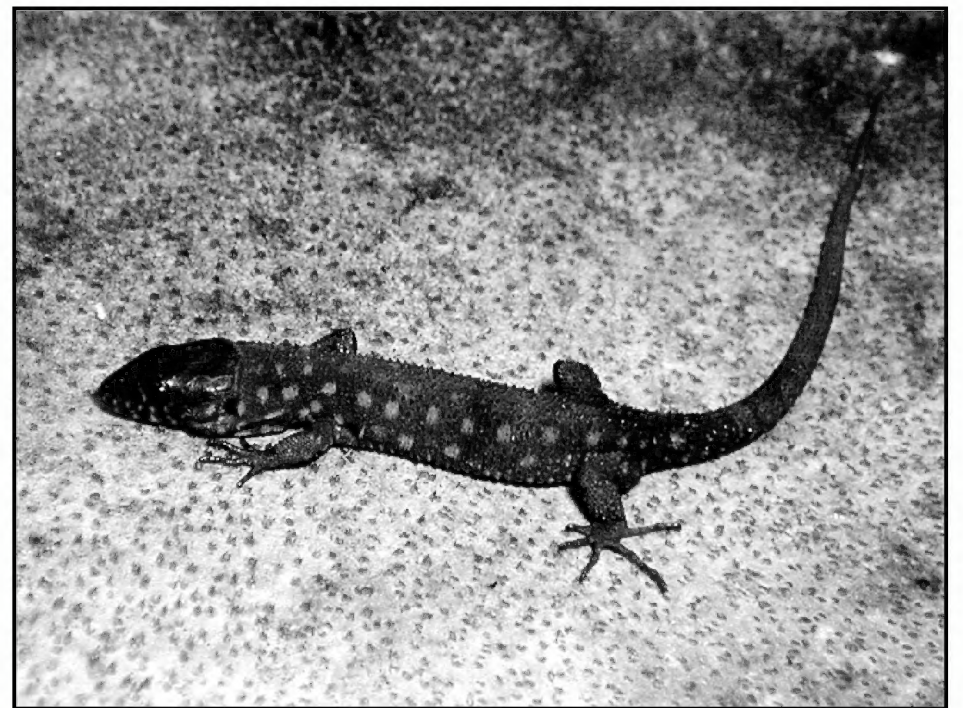
A commonly encountered species, this secretive medium-sized skink is one of the two viviparous lizard species found at Caño Palma. Several specific names have been applied to this wide-ranging lizard including *mabouya*, *alliacea*, *brachypoda*, and *unimarginata* (Lee, 1996).

Xantusiidae

Lepidophyma flavimaculatum Duméril 1851

Night lizard, *perrozompopo del Atlántico*

Both nocturnal as well as diurnally active, several specimens of this highly secretive species were observed at the station under rotting logs in November 2000. Additional *L. flavimaculatum* were noted in November 2000 and March 2001 at the base of the Tortuguero *cerro* (hill) under logs and volcanic rocks. Viviparous in nature, certain populations of this lizard reproduce bisexually, though in lower Central America unisexual populations are known (Bezy, 1989).



A night lizard (*Lepidophyma flavimaculatum*).

SERPENTES

Boidae

Boa constrictor Linnaeus 1758

Boa constrictor, *boa común*

A heavily scarred 2 m (total length [TL]) *B. constrictor* was found on a bough of a small tree across the canal that borders the southern edge of Caño Palma in November 1995. An 82 cm (TL) juvenile was discovered a few hundred meters across the canal in the rafters of a local cabana in March 2001.

Corallus annulatus (Cope 1876)

Annulated Boa, *boa arborícola*

The only specimen observed at the station was discovered in vegetation by a Texas Wesleyan University group in July 2000. In March 2001, a 101 cm (TL) male was discovered on property immediately adjacent to Caño Palma. The specimen was observed on epiphytic growth on the side of a large tree during a mid-morning hike. This cryptic species has recently been confirmed to occur as far north as Guatemala (Smith and Acevedo, 1997).

Ungaliophis panamensis Schmidt 1933

Panamanian dwarf boa, *boí ta de Panama*

Two specimens have been observed at the station. A 45 cm (TL) male was discovered on an aerial root approximately one meter from the ground during an early evening hike in March 2001. The following morning, a 42 cm (TL) female was found on the rafters of the station's boat dock (2.5 m above ground). This species was first reported as occurring in Costa Rica in 1974 (Corn, 1974).

Colubridae

Clelia clelia (Daudin 1803)

Mussurana, *zopilota*

A 2 m (TL) mussurana was found in the early evening hours within flooded secondary forest in November 1995. A powerfully large opisthoglyphous or rear-fanged snake, *C. clelia* is



An annulated boa (*Corallus annulatus*). This 101 cm (TL) specimen was found resting on epiphytic growth approximately 2 m high on the side of a tree during a daytime hike.



A Panamanian dwarf boa (*Ungaliophis panamensis*). Although not previously recorded at Caño Palma, two specimens were encountered within a 24-hour period in March 2001. This female measured 44 cm (TL).

often cited for its unwillingness to bite when handled (Ditmars, 1931; Campbell, 1998).

Dipsas bicolor (Günther 1895)

Snail-eating snake, thirst snake, *falsa coral roja*

One specimen was encountered 3–4 meters above ground approximately 100 meters from the station during an evening hike in March 1997. Predominately a black and white banded species, Peters (1960) noted considerable variation in color among specimens of this species in his review of the subfamily Dipsadinae.

Drymobius margaritiferus (Schlegel 1837)

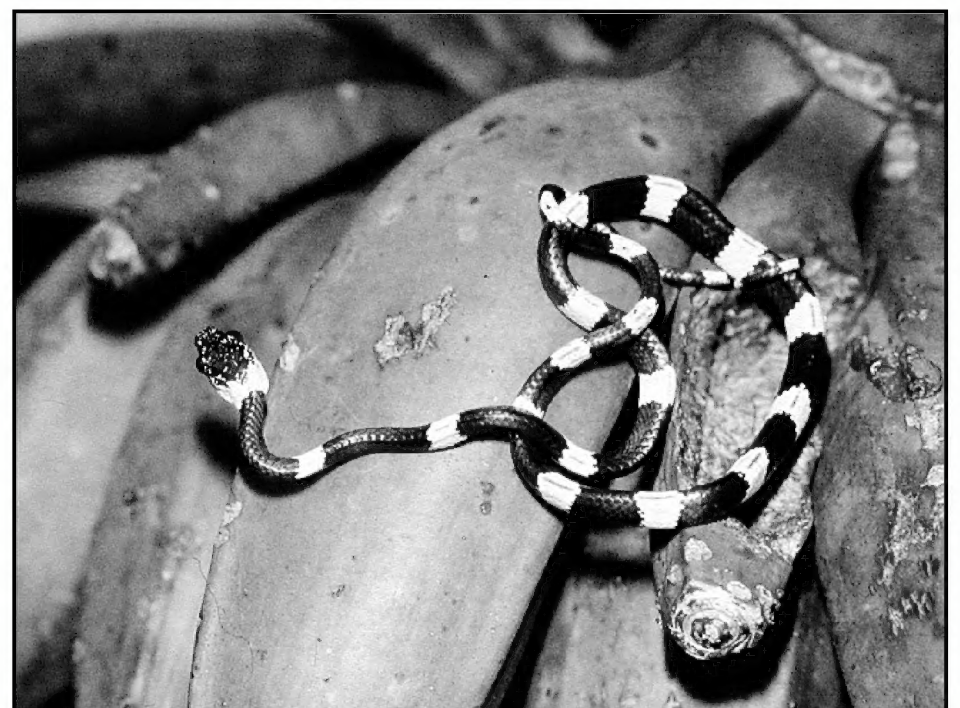
Speckled racer, *petatilla*

Two *Drymobius margaritiferus* were observed at Caño Palma in May 1995 and November 1995. Frequently found near water, this species feeds predominately on frogs.

Dryadophis melanolomus (Cope 1868)

Smooth-scaled racer, *sabanerita*

Also known as *Mastigodryas melanolomus*, this agile, racer-



A thirst or snail-eating snake (*Dipsas bicolor*).

like snake is distributed from Mexico to Panama. Two specimens were found near the station in November 1995 and March 1997.

Imantodes cenchoa (Linnaeus 1758)
Blunt- or chunk-headed tree snake, *cordelilla*

Imantodes inornatus (Boulenger 1896)
Inornate tree snake, *cordelilla palida*

Of the two species of *Imantodes* that occur at Caño Palma, *I. cenchoa* appears to be the one most often observed. Highly adapted for an arboreal lifestyle, this attenuate species can span a gap between branches using close to one-half its body length (Zug et al., 1979). Two neonates were encountered in March 2001. Several *I. inornatus* were observed at Caño Palma in March 1997. Myers (1982) found sexually dimorphic characteristics in both *Imantodes* species; in his samples, females had longer heads and proportionately shorter tongues (forks) than males. Myers also found that males had a higher incidence of tail breakage than females.

Leptodeira septentrionalis (Kennicott 1859)
Cat-eyed snake, *ranera*

Two specimens were observed in close proximity to a water-filled sump at the rear of the station compound in November 1995. Duellman (1958) noted this species was frequently encountered at breeding congregations of frogs in Mexico; numerous authorities also mention its fondness for anuran eggs. Some authorities recognize the subspecific form found in the Tortuguero area as a distinct species, *Leptodeira polysticta* (Campbell, 1998).

Leptophis depressirostris (Cope 1861)
Parrot snake, *chocoya flaca*

Leptophis nebulosus Oliver 1942
Clouded parrot snake, *chocoya flaca*

Four species of *Leptophis* are known from the Tortuguero area. Predominately arboreal in habits, *Leptophis* spp. feed predominately on lizards and frogs. Henderson and Hoervers (1977) found a positive correlation between the number of *Leptophis mexicanus* collected and the amount of precipitation in Belize.

Both *Leptophis depressirostris* and *L. nebulosus* were found at Caño Palma in March 1997.

Oxybelis aeneus (Wagler 1824)
Brown vine snake, *bejuquilla*

Of the three *Oxybelis* species occurring in the area, only *O. aeneus* has been positively identified at the station on several occasions. An opisthoglyphous or rear-fanged snake, the arboreal *O. aeneus* feeds largely upon lizards. A highly adaptable, wide-ranging species, *O. aeneus* is distributed from southern Arizona to central Brazil.

Sibon nebulata (Linnaeus 1758)
Cloudy snail-eating snake, thirst snake, *jaspeada*

Several specimens were found in arboreal locations in March 1997. Campbell (1998) cites finding seven *S. nebulata* in the early morning hours on one snail-infested tree in the Caribbean lowlands of Costa Rica.

Elapidae

Micrurus alleni Schmidt 1936
Allen's coral snake, *coral de allen*

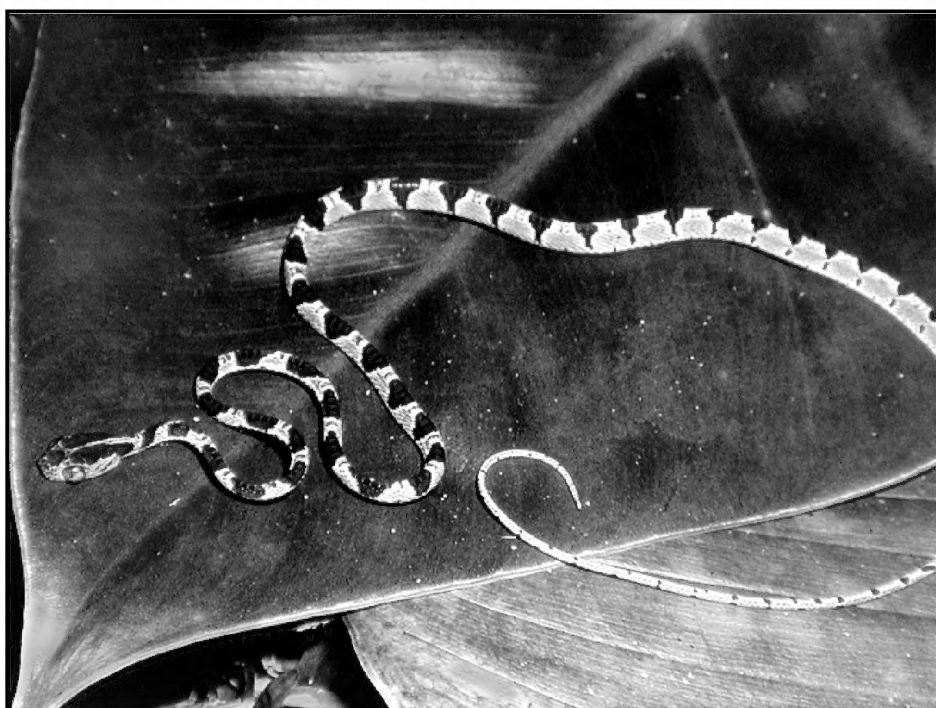
Micrurus multifasciatus (Jan 1858)
Bicolor coral snake, *coral*

Three species of coral snakes occur in the Tortuguero area, though only *Micrurus alleni* and *M. multifasciatus* have been identified as occurring at the station. *M. alleni* appears to be more often observed, usually noted during nighttime excursions in wet or flooded portions of the property. In contrast, the bicolor *M. multifasciatus* has been encountered on several occasions only during the day. The feeding habits of these two species were noted in an earlier CHS *Bulletin* (Burger, 1997).

Viperidae

Bothrops asper (Garmen 1883)
Fer-de-lance, *terciopelo*, *barba amarilla*

Numerous specimens have been observed at Caño Palma. *Bothrops asper* are usually inactive during the day, preferring



A blunt-headed tree snake (*Imantodes cenchoa*).



A juvenile terciopelo (*Bothrops asper*).

to remain concealed in ground cover, but become active at dusk and are frequently observed on or near trails. Although most tend to flee when approached at night under flashlight, in March 2001 an exceptionally large adult (approx. 1.75-2 meters TL) stood its ground as it was approached in the middle of one of the station's trails. Highly irritated, this specimen continuously thrashed about and vibrated its tail before finally retreating into a nearby hollow stump. Sexually dimorphic at birth, neonate males have yellow tail tips while females do not (Solorzano and Cerdas, 1989).

Bothriechis schlegelii (Berthold 1846)

Eyelash viper, *vi bora de pestañas*, *bocaracá*, *oropel*

Known locally as bocaracá, *Bothriechis schlegelii* has only tentatively been identified as occurring at the station. Numerous specimens were observed in nearby Tortuguero National Park in November 1993 and March 1997. This species strikes readily and was responsible for 90 reported bites in Costa Rica in 1979 alone (Bolanos, 1984).

Lachesis stenophrys Cope 1876

Central American bushmaster, *matabuey*, *cascabel muda*

One *Lachesis stenophrys* was observed coiled at the edge of the station compound in 2000. The largest of the pit vipers, *L. stenophrys* is a seldom encountered inhabitant of primary forest. For years known as a subspecies of *Lachesis muta*, Zamudio and Greene (1997) separated the three distinct populations as *Lachesis muta*, *L. stenophrys*, and *L. melanocephala*.

CROCODYLIA

Alligatoridae

Caiman crocodilus (Linnaeus 1758)

Common caiman, *caimán*

Crocodylidae

Crocodylus acutus Cuvier 1807

American crocodile, *cocodrilo*

Both the common caiman (*Caiman crocodilus*) and the Ameri-

can crocodile (*Crocodylus acutus*) are found in the rivers of the Tortuguero area. Caiman are especially abundant in the smaller canals (including the canal that borders the southern boundary of Caño Palma) while the more wary American crocodile inhabits the larger rivers of the area where they are occasionally observed basking.

AMPHIBIA

GYMNOPHIONA

Caeciliidae

Gymnopsis multiplicata Peters 1874

Caecilian, *soldas*, *dos cabezas*, *suelda con suelda*

Only one *Gymnopsis multiplicata* has been found at the station, this being the prospective meal of a bicolor coral snake (*Micrurus multifasciatus*). After beginning to consume the caecilian, the coral snake, perhaps disturbed by people watching nearby, regurgitated its prey and crawled away (Burger, 1997).

CAUDATA

Plethodontidae

Bolitoglossa striatula Noble 1918

Striated palm salamander, *salamandra estriada*

Although considered to be the most common salamander in the Caribbean lowlands of Costa Rica, only one *B. striatula* has been observed at the station. A 10 cm specimen was found in March 2001 approximately 1.3 m high on vegetation during early evening hours.

ANURA

Bufonidae

Bufo coniferus Cope 1862

Green climbing toad, *sapo espinosa*

Bufo marinus (Linnaeus 1758)

Marine toad, *sapo grande*, *sapo verrugosa*



At least three species of Neotropical salamanders inhabit the Tortuguero region. This is *Bolitoglossa striatula*.



A green climbing toad (*Bufo coniferus*).



The most conspicuous frog in Costa Rica, *Dendrobates pumilio* is commonly referred to as the strawberry poison dart frog.

Bufo coniferus is partially arboreal, having been found in trees, bamboo, as well as on the ground at Caño Palma. During March 1997 and March 2000, numerous juveniles were observed at the station. The widespread *Bufo marinus* is particularly abundant during the evening hours at the station compound.

Dendrobatidae

Dendrobates pumilio O. Schmidt 1857
Strawberry poison dart frog, *ranita de sangre*, *rana venenosa*

The most frequently observed amphibian at Caño Palma, *Dendrobates pumilio* is usually noted on the forest floor as well as on logs and stumps during the day. Tadpoles are occasionally seen in the vases of bromeliads at the station.

Hylidae

Agalychnis callidryas (Cope 1862)
Red-eyed treefrog, *rana ojo rojo*

The most commonly observed hylid at the station. Individuals

as well as amplexing pairs have been noted during the evening hours. Egg masses and tadpoles are frequently found at some of the lodges in Tortuguero.

Leptodactylidae

Eleutherodactylus diastema (Cope 1876)
Tink frog, *martillito*, *ranita de charral*

Named for its distinguished high-pitched call, the tink frog is one of eight *Eleutherodactylus* species noted from the Caño Palma–Tortuguero area. Unlike most species found within the genus, *E. diastema* is predominately arboreal and has enlarged treefrog-like disks on its toes and fingers. Approximately 35 species of *Eleutherodactylus* occur in Costa Rica.

Leptodactylus pentadactylus (Laurenti 1768)
Smoky jungle frog, *rana ternero*

Large and nocturnally active, *L. pentadactylus* typically is found near cavities and burrows on the forest floor. This frog is commonly observed near the station compound in both forest and forest-edge situations. Foam terrestrial nests are constructed near areas that are seasonally flooded. This species secretes an extremely obnoxious toxin that is irritating to the eyes and open cuts.

Acknowledgments

I am greatly indebted to a number of people who have helped in compiling this ongoing inventory and who have shared information on the herpetofauna of the Tortuguero area. They include Michael Blandford, Beth Burke, Tom Cryan, Michael Dixon, Maureen Donnelly, Ross Knop, Marc Lachaine, Daryl Loth, Daniel Mason, Debbie Mason, Fran Mason and Tom Mason. Appreciation is expressed to Tom Mason and Winston Card for comments and reading an earlier version of this manuscript. This project was supported in part by a grant from the Chicago Herpetological Society.

Table 2. Checklist of the Herpetofauna at Caño Palma–Tortuguero. Habitat categories: Aqu = aquatic; Arb = arboreal; Fos = fossorial; Ter = terrestrial; Rip = Riparian (aquatic margin). Diel activity codes: D = diurnal; N = nocturnal; U = unknown

Taxon	Habitat	Diel activity
Reptiles		
TESTUDINATA		
Cheloniidae (3)		
<i>Caretta caretta</i> ¹	Aqu	U
<i>Chelonia mydas</i>	Aqu	U
<i>Eretmochelys imbricata</i> ²	Aqu	U
Chelydridae (1)		
<i>Chelydra serpentina</i>	Aqu	D/N
Dermochelyidae (1)		
<i>Dermochelys coriacea</i>	Aqu	U
Emydidae (3)		
<i>Rhinoclemmys annulata</i> ²	Ter	D
<i>R. funerea</i>	Aqu	D

Table 2. (cont'd)

Taxon	Habitat	Diel activity
<i>Trachemys scripta</i>	Aqu	D
Kinosternidae (2)		
<i>Kinosternon angustipons</i>	Aqu	D
<i>K. leucostomum</i>	Aqu	D/N
SAURIA		
Anguidae (1)		
<i>Diploglossus bilobatus</i> ²	Ter	D
Corytophanidae (3)		
<i>Basiliscus plumifrons</i>	Arb/Rip	D
<i>B. vittatus</i>	Arb	D
<i>Corytophanes cristatus</i>	Arb	D
Gekkonidae (7)		
<i>Gonatodes albogularis</i>	Ter	D
<i>Hemidactylus</i> sp.	Arb	N/D
<i>Lepidoblepharis xanthostigma</i> ²	Ter	D
<i>Sphaerodactylus homolepis</i>	Ter	D
<i>S. millepunctatus</i>	Ter	D
<i>Sphaerodactylus</i> sp.	Ter	D
<i>Thecadactylus rapicauda</i>	Arb	N
Gymnophthalmidae (2)		
<i>Gymnophthalmus speciosus</i>	Ter/Fos	D
<i>Ptychoglossus plicatus</i>	Ter	D
Iguanidae (1)		
<i>Iguana iguana</i>	Arb	D
Polychrotidae (11)		
<i>Norops biporcatus</i>	Arb	D
<i>N. capito</i> ²	Arb	D
<i>N. carpenteri</i> ²	Arb	D
<i>N. fungosus</i>	Arb	D
<i>N. humilis</i>	Ter	D
<i>N. lemurinus</i>	Arb	D
<i>N. limifrons</i>	Arb	D
<i>N. lionotus</i> ²	Rip	D
<i>N. oxylophus</i>	Arb	D
<i>N. pentaprion</i>	Arb	D
<i>Polychrus gutturosus</i>	Arb	D
Scincidae (2)		
<i>Mabuya unimarginata</i>	Ter	D
<i>Sphenomorphus cherriei</i>	Ter	D
Teiidae (2)		
<i>Ameiva festiva</i>	Ter	D
<i>A. quadrilineata</i>	Ter	D
Xantusiidae (1)		
<i>Lepidophyma flavimaculatum</i>	Ter	N
SERPENTES		
Boidae (3)		
<i>Boa constrictor</i>	Arb/Ter	D/N
<i>Corallus annulatus</i>	Arb	N
<i>Ungaliophis panamensis</i>	Arb	N
Colubridae (31)		
<i>Chironius grandisquamis</i> ²	Arb/Ter	D
<i>Clelia clelia</i>	Ter	D/N
<i>Coniophanes fissidens</i> ²	Ter	D
<i>Dipsas bicolor</i>	Arb	N
<i>Dryadophis melanolomus</i>	Ter/Arb	D
<i>Drymarchon corais</i> ²	Ter	D
<i>Drymobius margaritiferus</i>	Ter	D

Table 2. (cont'd)

Taxon	Habitat	Diel activity
<i>Hydromorphus concolor</i>	Aqu/Rip	D
<i>Imantodes cenchoa</i>	Arb	N
<i>I. inornatus</i>	Arb	N
<i>Leptodeira annulata</i> ²	Arb/Ter	N
<i>L. septentrionalis</i>	Arb/Ter	N
<i>Leptophis ahaetulla</i> ²	Arb	D
<i>L. depressirostris</i>	Arb	D
<i>L. mexicanus</i>	Arb	D
<i>L. nebulosus</i>	Arb	D
<i>Ninia maculata</i> ²	Ter	D
<i>N. sebae</i>	Ter	D
<i>Oxybelis aeneus</i>	Arb	D
<i>O. brevirostris</i> ²	Arb	D
<i>O. fulgidus</i> ²	Arb	D
<i>Pliocercus euryzonus</i>	Ter	D/N
<i>Pseustes poecilinotus</i> ²	Arb	D
<i>Rhadinaea decorata</i> ²	Ter	D
<i>Sibon annulata</i>	Arb	N
<i>S. longifrenis</i>	Arb	N
<i>S. nebulata</i>	Arb	N
<i>Tantilla schistosa</i>	Ter	D
<i>T. supracincta</i> ²	Ter	D
<i>Thamnophis marcianus</i> ²	Ter	D
<i>Tretanorhinus nigroluteus</i> ²	Aqu/Rip	N
Elapidae (3)		
<i>Micrurus alleni</i>	Ter	N/D
<i>M. multifasciatus</i>	Ter	D/N
<i>M. nigrocinctus</i> ²	Ter	N/D
Viperidae (4)		
<i>Bothriechis schlegelii</i>	Arb	N/D
<i>Bothrops asper</i>	Ter	N/D
<i>Lachesis stenophrys</i>	Ter	N
<i>Porthidium nasutum</i>	Ter	D
CROCODYLIA		
Alligatoridae (1)		
<i>Caiman crocodilus</i>	Aqu	N
Crocodylidae (1)		
<i>Crocodylus acutus</i>	Aqu	N
Amphibians		
GYMNOPHIONA		
Caeciliidae (1)		
<i>Gymnophis multiplicata</i>	Fos	U
CAUDATA		
Plethodontidae (3)		
<i>Bolitoglossa colonnea</i> ²	Fos/Ter/Arb	N
<i>B. striatula</i>	Fos/Ter/Arb	N
<i>Oedipina</i> sp.	Fos	N
ANURA		
Bufonidae (6)		
<i>Bufo coccifer</i> ²	Ter	U
<i>B. coniferus</i>	Ter/Arb	D
<i>B. haematiticus</i> ²	Ter	D/N
<i>B. marinus</i>	Ter	N
<i>B. melanochloris</i> ²	Ter	N
<i>B. valliceps</i>	Ter	N

Table 2. (cont'd)

Taxon	Habitat	Diel activity
Centrolenidae (2)		
<i>Hyalinobatrachium fleischmanni</i> ²	Arb	N
<i>Centrolene</i> sp.	Arb	N
Dendrobatidae (2)		
<i>Dendrobates pumilio</i>	Ter	D
<i>Phyllobates lugubris</i> ²	Ter	D
Hylidae (11)		
<i>Agalychnis calcarifer</i>	Arb	N
<i>A. callidryas</i>	Arb	N
<i>Hyla ebraccata</i>	Arb	N
<i>H. loquax</i>	Arb	N
<i>H. phlebodes</i> ²	Arb	N
<i>H. rufitela</i>	Arb	N
<i>Scinax boulengeri</i> ²	Arb	N
<i>S. elaeochroa</i>	Arb	N
<i>Smilisca baudinii</i>	Arb	N
<i>S. phaeota</i>	Arb	N
<i>S. sordida</i>	Arb	N
Leptodactylidae (10)		
<i>Eleutherodactylus biporcatus</i>	Ter	D/N
<i>E. bransfordii</i>	Ter	D/N
<i>E. diastema</i>	Arb	N
<i>E. fitzingeri</i>	Arb/Ter	D/N
<i>E. mimus</i> ²	Ter	N
<i>E. noblei</i> ²	Ter	N
<i>E. ridens</i> ²	Arb/Ter	D/N
<i>E. rugulosus</i>	Rip	N
<i>Leptodactylus melanonotus</i>	Ter/Rip	N
<i>L. pentadactylus</i>	Ter/Fos/Rip	N
Microhylidae (1)		
<i>Gastrophryne pictiventris</i> ²	Ter	U
Ranidae (2)		
<i>Rana vaillanti</i>	Rip	N
<i>R. warschewitschii</i> ²	Ter/Rip	D/N

1. Reported by the Caribbean Conservation Corporation (CCC).
2. Other species noted from Tortuguero (Maureen A. Donnelly, pers. com.).

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Bull. Chicago Herp. Soc. 36(12):253, 2001

Erratum: Bowen, K. D., The Role of Visual and Tactile Cues in the Foraging Behavior of the Florida Banded Watersnake, *Nerodia fasciata pictiventris*

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Due to an unfortunate error by the editor, Table 1 was omitted from the above-mentioned article [Bull. Chicago Herp. Soc. 36(11):218-221]. The missing table appears below.

Table 1. Trial averages, group mean, and standard deviation of attack latency and tongue flicks for normal and blinded *Nerodia fasciata pictiventris* neonates. Trial averages refers to the fact that values from two normal and two blinded trials were averaged for each snake to obtain the values shown.

Snake	Attack latency		Tongue flicks	
	Normal	Blinded	Normal	Blinded
1	42.5	285.0	10.5	40.5
2	350.5	68.5	23.5	21.0
3	109.5	102.5	34.0	12.5
4	437.5	364.0	107.0	34.0
5	358.5	336.5	82.5	21.5
6	599.0	246.0	32.0	70.0
7	168.0	52.0	62.5	21.0
8	371.0	630.5	171.5	312.0
9	365.0	401.0	14.0	117.5
10	250.0	363.5	115.5	19.0
$\bar{x} \pm \text{S.D.}$	305.2 $\pm$ 165.3	285.0 $\pm$ 177.6	65.3 $\pm$ 53.0	66.9 $\pm$ 91.9

HerPET-POURRI

by Ellin Beltz

A true friend, indeed

“A teenage girl pulled her best friend to safety after an alligator attack that left the friend with a damaged arm. . . . She is recovering from surgery . . . [and said she] doesn’t think she would have been able to make it to shore without her friend’s help.” The girl added that her friend “saw his tail whipping around in the water and she told me she thought to herself she couldn’t let me die.” Her friend was right next to her during the attack and both heard the girl’s arm bones snap while the alligator was spinning her around in the water. Both girls are 14 years old and were with some other children floating on boogie boards in Florida’s alligator-infested Little Lake Conway. The other children fled for safety on the shore, leaving the two girls to come to shore on one boogie board — followed by the alligator. Two alligators were killed by the game commission after the attack. [August 20, 2001: Jefferson City, MO *Star Tribune* from Vicky Elwood; Daytona Beach *News-Journal* from Bill Burnett and the *Miami Herald* from Alan Rigerman; August 21 *Chicago Tribune* from Ray Boldt]

It was destined to happen someday

Agents from the Hawaiian Attorney General’s office and Honolulu police officers recovered a 7-foot-long boa constrictor and illegal sea creatures at a home in Wahiawa, Central Oahu. Captured were exotic coral, sea anemones, clams and other gastropods not native to Hawai’i. All the illegal animals were turned over to the state Department of Agriculture. The 29-year-old man who lived there was arrested on suspicion of committing two misdemeanor counts of possessing the snake and the illegal invertebrates. He was released pending investigation. The invertebrates will end up in the Aquarium and the snake will be shipped to the mainland. [*Honolulu Star-Bulletin*, August 30, 2001, from Ms. G. E. Chow]

It’s raining cans and frogs!

Meteorologist Tom Skilling answered an “Ask Tom Why” about proverbial rains of frogs: “While sounding almost biblical in nature, the ‘raining’ of objects such as frogs and fish is well-documented. A 1930 issue of *Nature* magazine even reported that an ice-encrusted turtle fell out of a severe hailstorm near Vicksburg, Mississippi. Rains of fish and frogs are the result of tornados or waterspouts passing over shallow ponds or creeks, sucking up the creatures and carrying them aloft into the thunderstorm before returning them to Earth when the funnel or thunderstorm updrafts weaken.” Inanimately, cans of soda were flipped nearly 100 miles after being ripped from their bottling plant by a tornado in 1995. [*Chicago Tribune*, August 20, 2001, from Ray Boldt]

Solar powered lizards

This is one of those stories that makes you wonder about biology graduate advisors. It has been known for years that many reptiles have temperature-dependent sex ratio changes. Some snakes and crocodiles build nests which regulate temperature; turtles pick their spot based on sun angle and duration of insolation. Now (wow): “Lizards might be able to control the

sex of their offspring by getting more or less sun and regulating the temperature during gestation, says an Australian study.” [*USA Today*, August 16, 2001, from Ms. Vicky Elwood]

Disoriented turtles

Baby turtles along Volusia County beaches are still getting disoriented by glow from house and car lights even after years of effort by residents and businesses. In 2000, 18 of the 245 total nests found were disoriented by lights compared with 20 of only 145 nests found in 2001. Officials speculate that “urban glow” a net-effect sky light is now more responsible for disorientation than individual lights from separate houses. [Daytona Beach, FL *News-Journal*, August 18, 2001, from Bill Burnett]

Most widely distributed?

An article from the “Visitor’s Guide to the National Parks and Preserves of South Florida,” Volume 12, Number 2, 2001, published by the U.S. Department of the Interior claims that the southeast Asian Brahminy blindsnake (*Ramphotyphlops braminus*) “has the greatest range of any other snake on earth” because it has been shipped worldwide in potted plants. Since they eat the eggs of ants and termites, they can find food just about anywhere. They are also parthenogenetic and do not need males to reproduce — all their offspring are genetic copies of the parent. Most amazing of all, they can either lay eggs or bear live young. The article also says that Burmese pythons of various sizes have been collected in the National Parks in South Florida leading researchers to state that there is an established population down there somewhere. [from new contributor William A. Black]

Sounds like ReptileFest

A great time was had by all New Zealand Herp Society members at the Annual Taranaki Rhododendron Festival. While some form of the mother tongue is still spoken out there down under, seems as though spelling has come from the Elizabethan linguistic tradition. Comments in the visitor book included: “Loved the Geckoes.” “Great work with Lizzards.” “Thoroughly enjoyed the garden Ghekos.” “Lovely Lizads.” And my favorite: “I loved the Gekcos.” [*MOKO*, Summer 2000]

Busted!

- Forty-nine pythons and monitor lizards were discovered in an American tourist’s suitcase while he was traveling on a French train headed for Germany. All the animals were protected and came from Indonesia prior to being confiscated by authorities. [Orlando, FL *Sentinel*, July 21, 2001, from Bill Burnett]
- More than 6,500 endangered sea turtle eggs and hundreds of turtle shells were found on a bus near Acapulco, Mexico, by inspectors for the federal environmental prosecutor’s office said the contraband was found during a search and three men were arrested. [*Arkansas Democrat-Gazette*, July 29, 2001, from Bill Burnett]

Venom and antivenin

- A 17-year-old Floridian was taken to hospital after he picked up a foot-long pygmy rattlesnake that he saw on the ground near his Jacuzzi. After he cut off the snake's head, a neighbor called help and Venom One responded. [*Miami Herald*, September 7, 2001, from Alan Rigerman]
- In Quincy, Illinois, a man was airlifted to the hospital after "impaling himself on the venom-filled fangs of a dead timber rattlesnake while mounting it on a display board. [*Chicago Reader*, August 24, 2001, from Ray Boldt]
- Snake antivenin was in short supply in prime rattlesnake states in the summer of 2001. Nevada, Utah and Arizona hospitals and poison control centers reported they were nearly out of the lifesaving fluids. The old antivenin was made by Wyeth Ayerst Laboratories in Pennsylvania; newer antivenin "CroFab" is being made by Protherics PLC which can't keep up with demand. They claim they never expected to have the entire market share so soon after beginning production. [*Albuquerque Journal*, August 25, 2001, from Jim Stuart]
- A 43-year-old man was trying to push an eastern diamond-back snake away from his car by hitting it with a stick when the snake bit him on his left hand. He killed the snake, wrapped up his finger and drove to his mother's house. His sister (a retired nurse) went after the bite with a sewing needle and he dropped to the floor when she wasn't looking. He was incoherent and so they put him in the car and took him to the hospital where he was treated and listed in stable condition. [*Marion Star-Banner*, September 2, 2001, from Alan Rigerman]

Don't hold back, Cap'n!

Several news stories have come in about "Venom One," a unit of the Miami-Dade Fire Rescue Department. Since it was founded in 1998, more than 300 calls for help have come in from much of the northern hemisphere including the Caribbean and Canada. Captain Al Cruz heads the unit which is funded by grants for which Captain Cruz applied. He says he gets so many calls because "there are some people [out there] who are flat-out idiots." A leading toxicologist at Miami's poison control center translates "about two-thirds of our patients are drunk males; we have a saying around here: 'Snakebites are often the reaction of ethanol and testosterone.'" Many victims try do-it-yourself treatment first; a big mistake. Don't suck out the venom or you may land in the hospital yourself. No tourniquets, no cutting and no electric current, added the toxicologist who says he's seen "dozens of patients . . . with third-degree burns on top of a snakebite. Many had hooked themselves up to car batteries." [*Miami Herald*, July 18, 2001, from Alan Rigerman]

Komo-phobia is a good thing

Once only concerned by the fangs of gossip columnists, several Hollywood personalities have been bitten, attacked or frightened (poor things!) by animals in the past year. In addition to the Komodo munch-on-Sharon-Stone's-husband much reported in the news, celebrities have been attacked by polar bears, parrots and capuchin monkeys. [*Talk Magazine*, September 2001, from Alan Rigerman] It was a slow news world back then.

Smart frogs?

A reader's letter to the *Miami Herald*: "I had the same problem with frogs in my pool. I was told to buy floating alligator heads. I couldn't find them anywhere, so I . . . bought five rubber snakes . . . and laid them around the pool patio — mostly on the sides facing the yard. I have not had a frog since! I don't know how smart frogs are, so I move the snakes around every now and then just to fool the little amphibians. It's a cheap fix, and it works." [October 17, 2000, from Alan Rigerman]

Asp not what wildlife can do for you . . .

- Contortrostatin, a protein found in the venom of copper-heads, has been found to limit the division of malignant human breast cancer cells. [*AARP Bulletin*, February 2001, from Jack Schoenfelder]
- A Spanish translator was required when Chicago Police responded to a report of a vicious animal and found a 6-foot-long albino python slithering down a hallway in Albany Park. The police had expected a Rottweiler or pit bull. They corralled the python with a box, a broom, tape and the translator. One officer said, "They don't teach you stuff like this in the police academy," according to the *Chicago Tribune* [August 28, 2001, from Ray Boldt].
- Thinking of snakes, Cleopatra and such, Ms. Britney Spears performed with a large albino snake even though PETA (People for the Ethical Treatment of Animals) had pleaded with her not to take the snake on stage. [*Miami Herald*, September 8, 2001, from Alan Rigerman] This reminds me of the famous pregnant Nastassja Kinski photo with the large snake, which was on the cover of *Photo Magazine* so long ago. A print of the photo was on display in a Canterbury frame shop with the notice: "This photo was taken without cruelty to animals; Nastassja is stuffed."

. . . but what we can do for wildlife

- Ten thousand leopard frogs a year used to die on US 441 near Gainesville, Florida; this year not a single one died. Biologists say it's the success story of their Paynes Prairie Wildlife Barrier Project. Four new passages were built under the highway and three-foot high concrete walls were placed on either side of the road. Treefrogs, however, can still climb the overhanging vegetation, plop over the barrier and get flattened. Tree trimming is planned to put a stop to that. [*South Florida Sun-Sentinel*, September 4, 2001, from Alan Rigerman]
- Kemp's ridley turtles are snacking from a "salad bar" of snagged vegetation on water intakes at the Florida Power's Crystal River nuclear power plant. Sick or injured turtles can get stuck against the rack and killed, so the power plant has stationed monitors to watch for turtles in the intakes. [*Miami Herald*, June 18, 2001, from Alan Rigerman]
- A Hawaiian couple, last in the news for self-published research linking cancer to wearing bras, has established "CHIRP," the Coqui Hawaiian Integration and Re-education Project." They hope to persuade local people that coqui frogs are musical, not noisy. [*Honolulu Advertiser*, September 10,

2001, from Ms. G. E. Chow] You can hear the coqui on <<http://www.hear.org>>.

- *Environmental Defense* reports that Alabama has opened a mitigation bank for gopher tortoises. The Mobile Water Commissioners set aside 220 acres, developers are contributing money and tortoises and help is underway for low income landowners to participate in the open space initiative. [undated, 2001, from Ms. G. E. Chow]

ESA-entially useless?

- The Pentagon is attempting to influence Congress to rewrite the Endangered Species Act [ESA] to exempt the military from restrictions protecting sea turtles, desert tortoises and other rare and endangered animals at military reservations around the U.S. [*Chicago Tribune*, August 23, 2001, from Ray Boldt]
- On August 29, the Interior Department agreed to list 29 plants and animals under the ESA including the Mississippi gopher frog, Southern California mountain yellow-legged frog and the Chiricahua leopard frog. Congress, however, still controls the agency's purse strings and may reduce the budget for ESA protection and study even further. [MSNBC, August 29, 2001, from Jim Stuart; and *Chicago Tribune*, August 30, 2001, from Ray Boldt]

Shocking, just shocking!

- “A hawk dropped a snake onto a power line, sparking a small brushfire that briefly threatened expensive homes northwest of Los Angeles. The 3-foot gopher snake was found headless and coiled around the top of a power pole.” [*Leesburg Daily-Commercial*, June 28, 2001, from Bill Burnett]
- The Naples *Daily News* told its readers “. . . that the newspaper was late because of a frog. A wayward frog short-circuited switching equipment inside a transformer at the paper. It shut down electricity to the computers and caused a two-hour delay in the press run” according to the *South Florida Sun-Sentinel*. [July 17, 2001, from Alan Rigerman and Bill Burnett]

Too much Gator-Aid?

- A two-headed crocodile was born in Thailand. It has four forelimbs and two torsos are joined just above the vent and tail. [*Time Magazine*, July 9, 2001, from Alan Rigerman]
- A four-foot-long, 80-pound American alligator was captured in Buffalo, New York, by animal control officers. Its well-fed condition and location leads authorities to believe that it was a captured animal set free or lost by its owner. The week before, a 2-foot-long spectacled caiman was captured in Harlem Meer in Central Park, New York City. [Bucyrus, OH *Telegraph-Forum*, June 28, 2001, from Bill Burnett]
- A 9-month-old dog was killed by an alligator near West Palm Beach while it was walking along the water's edge. A 10-foot gator was being sought by authorities. [*Big Lake Sunday News*, July 8, 2001, from Alan Rigerman]
- United Parcel Service is upset that someone lied about the

contents of a box which was shipped overnight to New York City. It contained an unhappy 5-foot-long alligator bound up in duct tape. UPS prohibits the shipment of live animals.

[*Arkansas Democrat-Gazette*, August 5, 2001, from Bill Burnett]

- An Australian blue heeler dog defended its 85-year-old owner from an alligator attack, receiving numerous puncture wounds until help arrived a hour later. The lady had fallen in her yard and was unable to rise, due to her injuries. [*Miami Herald*, July 27, 2001, from Alan Rigerman]

- “A 2-year-old girl was found dead. . . . Police believe she may have been killed by an alligator [in Winter Haven, Florida].” The mystery is whether the girl, who had wandered away from her backyard, drowned and then was eaten or the other way around. A 6½-foot alligator was trapped and killed anyway. [*Miami Herald*, June 25, 2001, from Alan Rigerman]

- Three men were arrested for killing an 11-foot 3-inch alligator in El Dorado, Arkansas. The size of the animal suggests it either walked up from Louisiana or was in the state before the Arkansas state started a gator stocking program, because it was “a pretty big alligator for Arkansas. As a matter of fact, I think folks in Louisiana would tell you that's a big alligator,” according to a spokesman for the state Game and Fish Commission. [*Arkansas Democrat-Gazette*, June 22, 2001, from Bill Burnett]

- A family in Winter Haven, Florida, awoke to find a 3-foot alligator in their house one morning. State officials captured the gator which was released. The family suspects the gator got in by slipping through a pet door. [*Arkansas Democrat-Gazette*, August 4, 2001, from Bill Burnett and Alan Rigerman]

Clutch Cargo?

“The plight of 20 cold-blooded sea turtles stirred the warm hearts of dozens of people over the weekend, ensuring that the little loggerheads will soon be back in the ocean off South Florida where they belong. Stumped by commercial airline policies that ban reptiles from the passenger areas . . . dozens of plane owners [hearing of their plight] offered to fly the animals home. . . .” The story started when a former science teacher scooped up the storm-tossed eggs and took 27 home to Columbus, Ohio. Twenty-four of the 27 hatched. She turned them over to the zoo and 20 survived for the flight home and release. [*South Florida Sun-Sentinel*, August 28, 2001, from Alan Rigerman] “None of the 2.5-inch flapping reptiles exploded in mid-air, as one major airline representative had feared when denying the turtles access to a coach seat,” reported the *Miami Herald* and the *Chicago Tribune* [August 29, 2001, from Alan Rigerman and Ray Boldt] The turtles were not permitted to travel in cargo because they are evidence in a federal case and must remain in official custody, according to the Leesburg, FL *Daily Commercial* [August 25, 2001, from Bill Burnett] which added that the animals also need to be released in South Florida waters to survive. How they will remain in custody once they were released into the wild was not explained. And there's no word yet on the federal charges including Lacey Act violations which may or may not be filed against the former teacher.

Too close for objectivity?

When the former director of the Little Rock Zoo was bitten by a western diamondback rattlesnake, the city of Little Rock realized it had a big hole in its wild animal laws and dozens of people suggested changes. Prior to Mr. Westbrook's envenomation, the only thing required to keep venomous animals was a letter from the Little Rock Zoo. Mr. Westbrook's letter was signed by . . . "Mr. Westbrook, Director," according to the *Arkansas Democrat-Gazette* [June 27, 2001]. On September 5, the same paper reported on a public meeting on "the slippery topic of venomous snakes." As far as I can tell, nothing was resolved or passed at that meeting although the city attorney warned city government to be very specific and make only enforceable ordinances and snake keepers pleaded to keep their pets. [both from Bill Burnett] Meanwhile, in Missouri, a man who "was bitten during a snake-handling ceremony at a local church was in critical condition in . . . [the] hospital," according to the *Charleston Gazette*. He was bitten by a large timber rattlesnake and was taken by ambulance, was unconscious and under heavy medication. The man had a

history of strokes and heart attacks. [August 16, 2001, from Vicky Elwood]

Thanks to everyone whose contribution is acknowledged

above and also to: Mrs. P. L. Beltz, Alan Rigerman, Ms. G. E. Chow, Ray Boldt, Bill Burnett, Vicky Elwood, J. N. Stuart & Jennifer Miyashiro, Marty Marcus, Bradford Norman for things I used from other clippings without also seeing that they sent the same story. And the envelope is just about empty now. Seems as though there have been very few reptile stories this fall after a spring and a summer filled with interesting tales. If you see any critter tales, please send them along — California does still get U.S. mail — albeit slowly. Send clippings with date/publication slug still attached and your name on each piece (those pesky little address labels free from all causes are good for this) to: Ellin Beltz, P.O. Box 934, Ferndale, CA 95536-0934. And, if you needed further incentive, next month you may be reading "contributed by Wes von Papineau" after every paragraph if you don't send anything!

Unofficial Minutes of the CHS Board Meeting, November 16, 2001

The meeting was called to order by Jack Schoenfelder at 7:30 P.M. Board members Dan Bavrisha, Rich Crowley and Char Haguewood were absent.

Officers' Reports

Recording Secretary: Emily Forcade read the minutes for the October board meeting. Corrections were made and the minutes were accepted.

Treasurer: Greg Brim distributed the treasurer's report for October 2001. He noted that our projected expenditures would exceed our income by about 15% this year. This was one reason why he was proposing that we establish a budget for the coming year. He distributed his proposed budget, which the group discussed. Greg will incorporate suggestions for changes as appropriate and present the new budget at the next board meeting for a vote. The treasurer's report was accepted.

Membership: Mike Dloogatch stated that our membership is 800. The group discussed a suggestion that membership dues be increased. This could probably be done by January 2003. A membership application committee was formed to include Mike Redmer, Steve Spitzer and Greg Brim.

Vice-President: Lori King discussed the AV needs for the November general meeting. Jack will take care of this. In December, our speaker will be Rob Carmichael who will discuss his nature center in Lake Forest. He will show some live animals as well as slides.

Corresponding Secretary: Steve Spitzer said that there have been some phone calls about ReptileFest. Darin Croft said that he would send some information to Jim Hoffman for the list serve. Steve suggested there be a line item about phone costs in the new budget.

Standing Committees

ReptileFest: Darin Croft reported that Radio Disney is willing to assist us in developing creative marketing strategies with potential advertisers, who can help us underwrite our advertisements for the Fest. We will have ads in the March and April issues of *Reptiles* magazine. Darin has an announcement for the 'Fest on the CHS website which can be downloaded and distributed as fliers to pet stores, shows, etc. Darin approved Linda Malawy's suggestion that we begin planning a Herps of Illinois display. Exhibitors' application forms will go out in the January *Bulletin*. The 'Fest committee hasn't been formed yet. Interested parties should contact Darin.

Grants: Mike Redmer reported that several weeks ago, notices about grant availability and the new deadlines for applications were sent to five of the larger herp-related listserves.

Shows: Jack said the CAS would like us to exhibit animals on Friday, Saturday and Sunday of the coming week. They have an exhibit titled Grossology, which has been a big draw with long lines. Our exhibits would be a big help to them in crowd control. They are also interested in us having a permanent exhibit that would be shown to the public when they are in the process of major exhibit changes (about three times a year.) The Herps in Illinois display could serve this function, with the CHS sponsorship prominently displayed. Compensation to us would also be part of these services. Tom Anton said that a poster of Chicago Regional Herps—including photos and information—could be sold and given to members. Mike Redmer said there is a lot of potential for outside sources of funding for such a project.

Raffle: No one has volunteered to take charge. Jack asked if any of those present would be willing to run the raffle on a rotating basis. Greg Brim volunteered. He is willing to store

the items as well. Ron Humbert offered to assist.

Library: Darin will tell Jeff Janovitz that we have a place at Peggy Notebaert to store the books, so he can proceed to organize and bring them to the general meetings.

Chicago Wilderness: Tom Anton said that there was a meeting 1½ weeks ago about the frog monitoring project. CW would like more CHS involvement in field trips, outreach and education. One idea suggested was to produce a pamphlet of Chicago turtles that could be identified from a distance with binoculars. The idea stemmed from the sense that turtles are not getting enough attention in terms of the public being able to see and identify them, even though this could be relatively easy based on the behavior of turtles, i.e., their tendency to sit on hard objects in the open for a long time. If CHS members could go on a turtle count as a field trip, this would be a way of getting the information. There may be up to 14 species we could identify in the Chicago area.

Symposium: Jack thanked Char Haguewood and the symposium committee members for producing an excellent and profitable symposium.

Ad Hoc Committees

Facility: Steve Sullivan said that work is being done by the Peggy Notebaert Museum to obtain funds to put up blinds and a portable screen in the McCormick Room. They haven't worked out a plan for a mounted screen. There will be additional construction at the museum but it won't affect the CHS.

Old Business

Animal of the month: Ron Humbert said that at the November general meeting, all members would be given a ballot to vote on their favorite boa constrictor. After a brief discussion it was agreed that treefrogs would be the animal of the month in December. People can enter up to three contestants.

The board meeting dates have been set for 2002. This will be posted on the website.

Gary Fogel will host a potluck December 14 board meeting at his home. An announcement will be on the website.

It was agreed to give a token of appreciation to security personnel at North Park Nature Center who have been so helpful in facilitating our use of the meeting site.

Round Table

Ron Humbert said that he and a snake would be at the Cultural Center, Dec. 1, 4:15 – 6 P.M. Six nature movies will be shown. He welcomed anyone else who would like to participate.

Jenny Vollman thanked everyone who helped out at shows in October.

Lori King thanked everyone who represented the CHS at the North American Breeders Show. In gratitude for our help they have donated \$500 to the International Iguana Society.

The meeting was adjourned at 9:30 P.M.

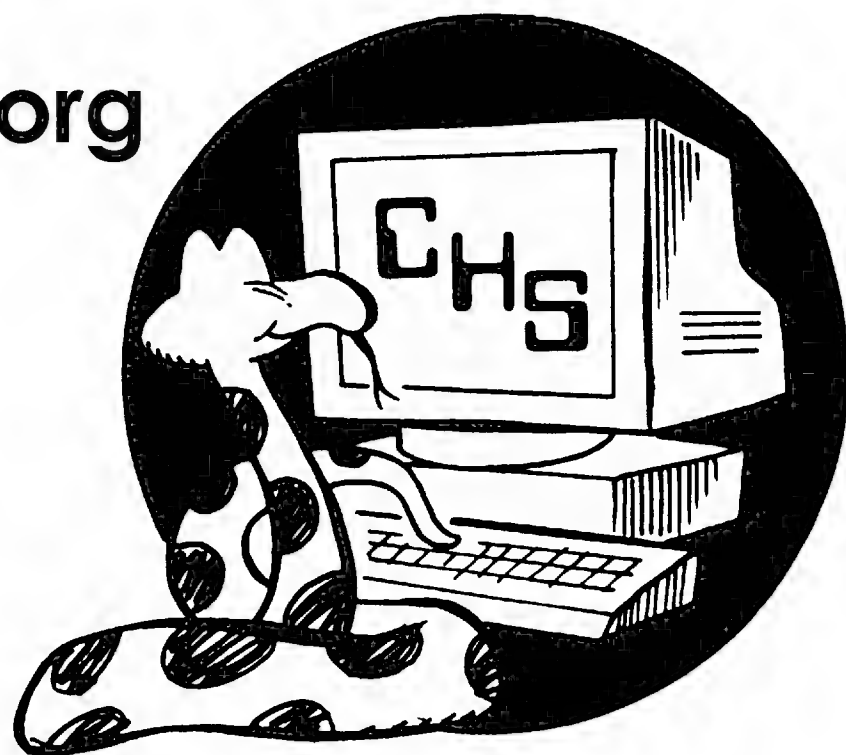
Respectfully submitted by Recording Secretary Emily Forcade

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org

You'll find:

- **Announcements**
- **CHS animal adoption service**
- **CHS events calendar & information**
- **Herp news**
- **Herp links**
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- **Much, much more!**



Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

Herpetology 2001

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

INTERSPECIFIC AGGRESSION IN FLAT LIZARDS

P. Korner et al. [2000, African J. Herpetology 49(2):139-146] note that mistaken identity and competitive exclusion are two alternative hypotheses proposed to explain interspecific aggression between males. They examined agonistic behavior in males of two lizard species: *Platysaurus minor* and *P. monotropis*. In each of nine outdoor field enclosures, they maintained a male and a female of both species (i.e., four total) and observed the dominance relationship between the males. Interspecific aggression was intense and *P. monotropis* was dominant in eight of nine enclosures. Furthermore, *P. minor* males received significantly more bite marks than *P. monotropis* males during the course of the experiment. To distinguish among the two hypotheses for interspecific aggression (mistaken identity and competitive exclusion), the authors presented *P. minor* males from sympatry and allopatry with model lizards of both taxa and measured aggressive responses. All trials with models were conducted in field enclosures where males were kept alone for the duration of the experiment. The model experiment revealed that compared to *P. minor* from sympatry, allopatric *P. minor* males were no less aggressive towards the heterospecific model than the conspecific model, a finding that supports the mistaken identity hypothesis. Finally, the same experiment included a supernormal stimulus (pink *Platysaurus* model) to test if males were simply responding to a brightly colored male lizard. Males showed some aggression towards the supernormal model, but significantly less than towards the two models (*P. minor* and *P. monotropis*) combined.

PATERNAL CARE BY GIANT BULLFROGS

C. L. Cook et al. [2001, J. Herpetology 35(2):310-315] report that male giant bullfrogs, *Pyxicephalus adspersus*, exhibit paternal care through construction of channels that guide tadpoles to larger bodies of water. These channels (which may exceed 15 m in length) make available cooler water to broods in the rapidly drying breeding puddles that frequently reach critically high temperatures. Eggs of *P. adspersus* died when exposed to temperatures above 38°C, reached in a third of the puddles measured. In contrast, tadpoles readily survived temperatures above 38°C, and experiments showed that tadpoles can survive the highest temperatures recorded at the puddles. Males actively defended their offspring against predators and were sometimes killed while performing this behavior. Survival of eggs and larvae in territorial broods was roughly twice that of broods in nonterritorial breeding arenas. The large cost of paternal care in the giant bullfrog is therefore offset by strong fitness gains. The authors suggest that channel construction and predator defense, crucial for tadpole survival, can be performed most efficiently by large-bodied parents, explaining why males (not the smaller females) perform parental care.

STRUCTURE OF AN ANURAN COMMUNITY

P. C. Eterovick and I. Sazima [2000, Amphibia-Reptilia 21(4):439-461], in order to assess the main factors influencing its structure, studied an anuran community from August 1996 to July 1997, in a 1200 m high rocky meadow site at the Serra do Cipó, Minas Gerais, Brazil, a region with markedly seasonal climate. The study site included three temporary habitats: a stream, a puddle, and a swamp. Thirteen anuran species were recorded at the study site. Species of tadpoles differed in microhabitat as to their position in water column, annual occurrence period, and water flow in the occupied sites. Aquatic vegetation, depth and occupied habitat (stream, swamp, or puddle) were of secondary importance in telling species apart. Calling sites of males were distinguished based on occupied habitat and annual activity period. Most species started their reproductive activities at the onset of the rains, in an opportunistic way. Water availability in the habitat seems to be the most important factor affecting temporal distribution of reproductive activities in the anuran community. Competitive interactions could not be detected in the community. The most important tadpole predators recorded at the study site were belostomatid water bugs and dragonfly nymphs. Their abundance peaks occurred after those of tadpoles, as predicted for predator-prey populations with interconnected cycles. Mortality rates were high for tadpoles, and predation is the most likely cause. Differences recorded among species, considering time of occurrence, tadpole microhabitats, and male calling sites, may reflect distinct specific adaptations and preferences.

TADPOLE INSECTICIDE TOLERANCE

C. M. Bridges and R. D. Semlitsch [2001, Copeia (1):7-13] note that much current conservation effort is devoted to determining the extent and the causes of the decline of many amphibian species worldwide. Human impacts have been implicated in many declines. Because genetic variance is critical in determining the persistence of a species in a changing environment, they examined the amount of genetic variability present in a single population for tolerance to an environmental stressor. They examined the amount of genetic variability among full- and half-sib families in a single population of southern leopard frogs (*Rana sphenoccephala*) with respect to their tolerance to lethal concentrations of the agricultural chemical, carbaryl. Analysis of time-to-death data indicated significant differences among full-sib families and suggests a large amount of variability present in the responses to this environmental stressor. Significant differences in responses among half-sib families indicated that there is additive genetic variance. These data suggest that this population may have the ability to adapt to environmental stressors. It is possible that declines of amphibian populations in the western United States may be attributed to low genetic variability resulting from limited migration among populations and small population sizes.

DARK GOPHER FROG CONSERVATION

S. C. Richter et al. [2001, J. Herpetology 35(2):316-321] note that conservation plans for amphibians often focus on activities at the breeding site, but for species that use terrestrial habitats for much of the year, an understanding of nonbreeding habitat use is also essential. The authors used radiotelemetry to study the postbreeding movements of individuals of the only known population of dark gopher frogs, *Rana sevosa*, during two breeding seasons (1994 and 1996). Movements away from the pond were relatively short (< 300 m) and usually occurred within a two-day period after frogs initially exited the breeding pond. However, dispersal distances for some individuals may have been constrained by a recent clearcut on adjacent private property. Final recorded locations for all individuals were underground retreats associated with stump holes, root mounds of fallen trees, or mammal burrows in surrounding upland areas. When implementing a conservation plan for *Rana sevosa* and other amphibians with similar habitat utilization patterns, the authors recommend that a terrestrial buffer zone of protection include the aquatic breeding site and adjacent nonbreeding season habitat. When the habitat is fragmented, the buffer zone should include additional habitat to lessen edge effects and provide connectivity between critical habitats. For the study site, the authors recommend a 1000-m buffer zone around the primary breeding site and each of two other potential breeding ponds.

PITFALLS OF PITFALL TRAPS

K. M. Enge [2001, J. Herpetology 35(3):467-478] examined the effectiveness of pitfall versus funnel traps using drift fence data from five studies that employed different array designs, fencing materials, and numbers of traps in diverse Florida habitats. In general, salamanders, anurans, lizards, and snakes were captured more frequently than expected in funnel traps than in pitfall traps. In most studies, hylid frogs (*Hyla*, *Acris* and *Pseudacris*) were captured significantly more often in funnel traps, but other anuran groups were captured either more often in funnel traps or equally as often in both types of traps. Most lizards and medium-sized and large snake species were captured more often in funnel traps, but semifossorial lizard (e.g., *Eumeces egregius*) and snake (e.g., *Tantilla relicta*) species were usually captured in pitfall traps. Too few turtle and small snake species were trapped to draw conclusions. Other studies that found funnel traps to be less effective than pitfall traps for some herpetofauna used funnel traps that were smaller or that might have been poorly constructed or installed. Reptiles had similar mortality rates in both types of traps, but in drier habitats anurans were more prone to dying in funnel than in pitfall traps, despite the presence of shade covers and sponges. Overall herpetofaunal mortality rates were higher in funnel traps than pitfall traps, but this difference was significant only for the study with the longest interval between checking traps in terrestrial habitats. Traps should be checked at least every three days to minimize mortality. In the Coastal Plain of the southeastern United States, most species can be effectively sampled by using only funnel traps, but pitfall traps should be added in xeric upland habitats to increase the chance of capturing semifossorial or fossorial reptiles.

POSTNATAL LECITHOTROPHY

V. A. Lance and D. J. Morafka [2001, Herpetological Monographs 15:124-134] note that lecithotrophic (yolk based) nutrition is a well-documented condition for the embryos of oviparous reptiles. However, the continuation of this nutritional state following hatching, here formally defined as postnatal lecithotrophy, has rarely been considered in reptile life history studies or in reptile nutritional strategies. Approximately 50% of the caloric value of yolk lipids may be conserved as a post hatching reserve for both growth and mobility in neonate North American tortoises. A preliminary experiment was designed to study if the metabolic dependence on residual yolk may be quantified and the duration of that dependence delimited. Baseline data from tortoise egg yolk established the lipid components available in the yolk prior to hatching. Analysis of blood plasma identified those lipid components present in adult tortoises, and finally, circulating blood from neonate tortoises was drawn at intervals to monitor the extent to which lipid components abundant in yolk continue to be utilized. Neonate tortoises subsisting on residual yolk had significantly higher plasma lipids than neonate tortoises that had been fed. All of the lipid fractions including total lipid, triacyl glycerol, phospholipid, cholesterol and cholesterol esters were significantly higher in fasted than in fed tortoises. Also there were significant differences in some of the individual fatty acids between fed and fasted neonates.

Prior observations and inferences suggest that this nutritional stage may continue through the first six months following hatching. It may also be attenuated by a secondary conversion of yolk invested energy into fat. Field observations indicate that lack of rainfall and associated deficits in available forage may make newly emergent neonates in the western and central Mojave Desert almost entirely dependent on such reserves for their first half year of life. Post natal lecithotroph tortoises may be able to emerge into a dry September Mojave Desert landscape, disperse rapidly to first shelter, inoculate themselves with fermenting anaerobes through coprophagy, grow, burrow, and hibernate without ever feeding on any conventional nutritional forage.

ECOLOGY OF AN ARBOREAL LIZARD

N. Ellinger et al. [2001, J. Herpetology 35(3):395-402] studied habitat use, activity patterns, foraging mode and prey spectrum of *Tropidurus azureus weneri* using a tower crane located in an Amazonian lowland rain forest in southern Venezuela. The lizards were strictly arboreal with a preference for the branches and twigs of the canopy. The horizontal distribution of lizards within the 1.4-ha study area was clustered and remained remarkably stable during two consecutive years. The lizards favored high and well-structured crowns with tree holes that served as shelters during the night. Activity was highest at air temperatures above 28°C measured at a height of 21 m. Activity patterns were influenced by cloud cover and insolation. *Tropidurus azureus weneri* showed notable agility and tended toward more active foraging patterns than found in other tropidurid lizards. The prey spectrum was dominated by ants.

GARTERSNAKE MATING SYSTEMS

R. Shine et al. [2001, Copeia (1):82-91] studied the spring emergence of red-sided gartersnakes (*Thamnophis sirtalis parietalis*) from a large communal den in Manitoba to clarify the context in which courtship and mating occur. In particular, is the mating system in such a massive aggregation (> 20,000 snakes) substantially different from that at smaller dens? Radio-tracked female snakes stayed near the den for a few days postemergence, apparently waiting until they recovered locomotor ability after the long hibernation period, before setting out for their summer ranges. Females dispersed from the den in all directions, rather than following distinct migration corridors. Male snakes moved frequently and spent much of their time far from the den in surrounding woodland. Most males remained near the den for only a small proportion of the entire mating season, apparently because of high rates of energy expenditure during mate-searching and courtship. Courting groups contained from 1 to 62 males and were largest close to the den. Most courting and mating occurred in groups of less than five males, often more than 20 m from the den. These small group sizes resulted from the females' dispersal prior to mating. Larger groups did not induce female cooperation (mating) more quickly than small groups. Despite the spectacular aggregations of courting snakes within the den, most reproductive activity in this population (as in other gartersnake populations) occurs in small groups, widely dispersed over a broad area.

ATHERIS SUBOCULARIS REVISITED

D. P. Lawson et al. [2001, Copeia (3):737-744] report that recent reptile collections from southwestern Cameroon contain four specimens referable to *Atheris subocularis* Fischer, currently considered a synonym of *Atheris squamigera* (Hallowell), and previously known only from the holotype collected prior to 1888. Phylogenetic analysis of a 647 bp DNA fragment of the mitochondrial cytochrome b gene indicates that *A. subocularis* forms a monophyletic group. Based on this analysis and a suite of morphological characters that readily differentiate *A. subocularis* from its congeners, the authors resurrect *A. subocularis* Fischer from the synonymy of *A. squamigera* (Hallowell). Female *A. subocularis* remain unknown, and the distribution of this taxon lies completely within that of its closest relative, *A. squamigera*. Taxonomic accounts are provided for *A. subocularis* and *A. squamigera* in the area of sympatry, and evolutionary hypotheses for the presence of *A. subocularis* are discussed.

EL SALVADOR CTENOSAURS

C. R. Hasbun et al. [2001, Herpetozoa 14(1/2):55-63] demonstrate that the *Ctenosaura* populations from El Salvador previously referred to *C. quinquecarinata* (Gray, 1842) are conspecific with *C. flavidorsalis* Köhler and Klemmer, 1994. Scalation characters and a detailed color description of this latter species are presented. The documented distribution of *C. flavidorsalis* extends from eastern Guatemala to eastern El Salvador and from southwestern Honduras to the Comayagua Valley in south-central Honduras.

GEOGRAPHIC VARIATION IN CAIMAN

S. D. Busack and S. Pandya [2001, Herpetologica 57(3): 294-312] note that *Caiman crocodilus* and *C. yacare* are economically valuable species afforded legal protection both within the United States and around the world. While five populations of these species have received formal taxonomic recognition between 1758 and 1955, there has never been an analysis of variation across populations representing the entire range of these species. The authors examined 13 external morphological characteristics in 360 individuals from known localities distributed throughout the range of these taxa. Using covariance, principal component and discriminant function analyses, they find no defensible basis for the partition of *C. crocodilus* into subspecies, nor do they feel that considering *C. yacare* a subspecies of *C. crocodilus*, as proposed by some, is warranted. The implication of these findings for enforcement of current legislation is discussed.

PREDATION EXPERIMENTS ON TADPOLES

M. J. Parris et al. [2001, J. Herpetology 35(3):479-485] estimated fitness components for parental and F₁ hybrid genotypes between *Rana blairi* and *Rana sphenocephala* by measuring larval performance in wading pools. The effect of three predators (papershell crayfish, *Orconectes immunis*; eastern newt, *Notophthalmus viridescens*; green sunfish, *Lepomis cyanellus*) on larval growth and survival was used to assess differential performance of genotypes in a predatory aquatic environment. Larval genotypes were obtained from artificial crosses between adults collected from a natural population sympatric with these predators in central Missouri. After hatching, larvae were reared in single-genotype groups in outdoor experimental wading pools for 14 days. A higher proportion of *R. sphenocephala* survived than did *R. blairi*, and F₁ hybrids did not differ significantly in survival from either parental genotype. Fish predation was severe for all genotypes and reduced survival to a greater degree than other predators. Body mass did not differ significantly among genotypes or predator treatments. Relatively high survival and growth for F₁ hybrid larvae suggests natural hybridization between *R. blairi* and *R. sphenocephala* can produce novel and relatively fit hybrid genotypes that can cope with predators just as successfully as parental genotypes. Furthermore, low survival of all genotypes in experimental pools containing fish is consistent with the observation that leopard frog larvae do not normally coexist with fish.

RARE NAMIBIAN SNAKES

A. M. Bauer et al. [2001, Herpetozoa 14(1/2):75-79] report the discovery of the third known specimen of *Coluber zebrinus* Broadley & Schätti, 2000 and fifth known specimen of *Prosymna visseri* FitzSimons, 1959 from northwestern Namibia. The new material is described. The distributions of both of these rare colubrids appear to be reflective of a previously undocumented niopane savanna area of endemism stretching from the Kamanjab region of Namibia to south-central Angola and beyond. A similar distribution is shared by numerous other reptiles.

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For sale: Yellow-head reticulated pythons, hatched 5/21/01, feeding on rat hoppers/lg mice, yellow/gold heads and patterns, chins and throats have started to yellow, parents have yellow (F) and gold (M) bellies exceeding 50% of body length. Female's head lemon yellow, male's gold. Good temperaments on parents and offspring. Asking \$150 ea/\$275 pr. Shipping available. Pictures of offspring and parents available. For comments or questions call (614) 262-0970 (ask for Notah) or send inquiries to jbrown4403@aol.com.

For sale: Green anacondas, c.b. 9/01, beautiful, healthy and DOCILE, \$175 each; yellow anacondas, c.b. 6/01, flawless little screamers, \$95 each; Amazon tree boas, c.b. 7/01, solid yellow, \$125, orange and green, \$150, both are female; 11' female tiger retic, stunning specimen, tame and a great feeder, \$550 or best offer; jungle carpet pythons from nice black and yellow parents, \$100 each or \$175/pair. Mark Petros, Strictly Serpents, (847) 836-9426, E-mail: MLPserpent@hotmail.com.

For sale: Send SASE to CRC, P.O. Box 0731, Las Vegas NV 89125-0731 for brochures and list of species available. Limited bookings available for guided tours of herpetological collection sites in Nevada. Call/fax (702) 450-0065. URL <http://www.herp.com/crc/> E-mail: crsafetie@aol.com.

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Wanted: west Florida reptile collector would like to hear from other reptile collectors from all parts of the U.S. to trade, buy, sell reptiles of all types. Tony Picheo, 11080 lillian Hiway, Pensacola FL 32506, (850) 453-8133.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: <MADadder0@aol.com>.

News and Announcements

HERP OF THE MONTH

To promote attendance at the CHS monthly meetings, the Board of Directors has agreed, on a trial basis, to offer a new monthly feature known as “Herp of the Month.” Each monthly meeting will showcase a different herp and CHS members can bring one specimen of the “Herp of the Month” to be judged against other entries from other CHS members. Ribbons and/or trophies will be awarded to the top three winners.

The “Herp of the Month” for the December 26 meeting will be the treefrog (up to three per member).

ELECTION RESULTS

As a result of the elections held November 28, 2001, the following officers and members-at-large will serve on the CHS Board of Directors for the year 2002.

President:	Jack Schoenfelder	Membership Secretary:	Michael Dloogatch
Vice-president:	Lori King	Sergeant-at-arms:	Dan Bavirsha
Treasurer:	Greg Brim	Members-at-large:	Tom Anton
Recording Secretary:	Emily Forcade		Darin Croft
Corresponding Secretary:	Steve Sullivan		Ron Humbert
Publications Secretary:	Michael Redmer		Jenny Vollman

REPTILE RAMPAGE 2002

For the second year, the Wildlife Discovery Center (City of Lake Forest) will be hosting this reptile educational exhibit featuring hundreds of live reptiles and amphibians including many venomous species. A \$5 (adult) or \$2 (children under 6) donation is requested at the door. All proceeds will go to the Wildlife Discovery Center to care for its reptile collection. The event will be held on Sunday, March 10, 9 A.M. to 5 P.M., at the Lake Forest Recreation Center Gym. If any CHS member is interested in displaying their pet reptile, we welcome you! For more information please contact Rob Carmichael, Program Manager and Curator of the Wildlife Discovery Center, at (847) 615-4388, or E-mail: carmichr@cityoflakeforest.com.

TURTLE AND TORTOISE SEMINAR

The New York Turtle and Tortoise Society announces Seminar 2002, to be held Saturday, January 5, 2002, 9 A.M. to 5 P.M., at the Linder Theater, American Museum of Natural History, Central Park West at 81st Street, New York City. Topics and speakers are: “Giant Tortoises — New Hope, New Challenges,” Peter C. H. Pritchard, Director, Chelonia Institute, Oviedo, Florida; “Conservation of Radiated and Spider Tortoises at the Cap Ste. Marie Preserve, Madagascar,” John L. Behler, Curator of Herpetology, Bronx Zoo; “The Tortoise Reserve, An Overview of Our First Decade of Turtle Conservation Efforts,” David S. Lee, Director, Tortoise Reserve, and Curator of Birds, North Carolina Museum of Natural History, Raleigh; and “Physiological Adaptations of Overwintering Hatchling Turtles in Northern Environments,” Patrick J. Baker, Department of Zoology, Miami University, Oxford, Ohio. The seminar will be a full-day event. The fee for the day, including a buffet lunch at the Museum Food Court, is \$30 per person — if you register by Saturday, December 29. The fee at the door without reservations will be \$35 per person. Send check for \$30 per person payable to NYTTS to: Seminar 2002, P.O. Box 878, Orange, NJ 07051-0878 (registration must be postmarked no later than December 29, 2001). More information available at <http://nytts.org>.

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, December 26, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Rob Carmichael** of the Lake Forest Wildlife Discovery Center will describe the operations of the Center. Rob's program will be illustrated with slides and live animals.

At the January 30 meeting, **Dr. Natalie D. Mylniczenko**, a veterinarian with the Lincoln Park Zoo, will speak on "Caecilians: Husbandry and Medical Management."

The regular monthly meetings of the Chicago Herpetological Society now take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the January 18 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot behind the building.

The Chicago Turtle Club

Chicago Turtle Club members, family, friends, and all turtle enthusiasts are cordially invited to the CTC Potluck Holiday Party for an afternoon of fellowship and good cheer. The party is Sunday, December 30, noon to 4 P.M., at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

DONATIONS TO THE OCTOBER 31 RAFFLE

The following is a listing of those businesses and individuals who generously donated items for our monthly raffle at the October 31 meeting. The donated items are shown in parentheses.

Midwest Zoological Research (NutriBACdf supplement); **Tetra** (ReptoMin floating food stix); **Super Pet** (Floating Island / Rock Pool Cover / Island Sanctuary / Hanging Gardens cage decor / ceramic dishes); **Hagen** (OrnamentAlls cage decor / Prime supplement); **ZooMed** (Repti-Temp thermostat / Repti-Sun 2.0 lights); **Don Wheeler** (western diamondback rattlesnake print); **Ron & Dotty Humbert** (cage decor); **Karl & Erik Graff** (Fluval aquarium filter / book: *The Birds of Illinois*); **Dr. Gery Herrmann-Mundelein Animal Hospital** (snake puppet); **Fran Kostka- KFK Jewelry** (turtle necklace); **Lori King** (clinging lizard corner accent / dino fridge magnets); **Greg Brim** (book: *Snakebite Survivors' Club*); **Mike Dloogatch** (*Fauna* magazine); **Jack Schoenfelder-Reptiques** (dragon plush toy); **Sally Hajek** (herp color prints); **Charlotte Henkle** (mini aquarium & light / grapevine cage decor / light & fixture); **CHS** (T-shirts / herp husbandry manuals).

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